

# *MasterLink: Introducing the Concept*

*Presented to  
Maintenance &  
Diagnostics, LLC*

*Exhibit 1*

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# *MasterLink Deliverables to the Electric Power Industry*

- *Facilities Automation Simplification Technology (FAST): A Paperless Workorder Management System with Industry-Specific Capabilities*
- *Expert Problem Domain Analysis*
- *Mobile Workforce Management Innovation*

## ***FAST Client-Server Software, Automated Functions Include:***

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- ***System Implementation***
- ***Job Creation/Planning***
- ***Job Scheduling***
- ***Paperless Workorder  
Dispatching/Management***
- ***Field Data Acquisition***
- ***Policy Management***
- ***Management Reporting***
- ***Wireless Control of Mobile  
Workers***

## *Electric Power Industry Domain Analysis Activities:*

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- *Definition of Scope*
- *Formulate Work System Charter Statement*
- *Develop Use-Cases (scripting)*
- *Create Domain Dictionary*
- *Design System Construction Parameters*
- *Map Legacy Data*
- *Adapt Core **FAST** Functionality to the Electric Power Industry*

# *Electric Power Industry - Work Process Innovation*

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- *Benchmark Data - Internal & External*
- *Develop Optimal Skill Resource Utilization Factors*
- *Implement Intelligent Algorithms to Initiate Changes*
- *Investigate Outsourcing Opportunities*
- *Seek Out "Best of Class" Models from Other Industries to Emulate in the Electric Power Industry*



## ***Why MasterLink?***

- ***Unique Concept***
- ***Superior Design***
- ***Vision for the Future***

### **I. The Purpose of Today's Presentation Is To:**

- A. Explain Why the MasterLink's Solid, Simple, and Foundational Design Concept is Unique
- B. Demonstrate the Design Integrity
- C. Share a Vision of the Future of Mobile Work Management

### **II. The Goals of Today's Presentation Are To:**

- A. Validate M&D's Belief in MasterLink Concept
- B. Establish and Investigate the Basis for Forming a Long-Term Partnership

## ***Elements Common to All Work Environments***

- ***Targets - Anything You Aim to Work On***
- ***Resources - Human & Material***
- ***Time***
- ***Objectives (work)***
- ***Rules (policy)***

I. Targets are anything requiring action. May be a physical entity, or a process.

II. Resources are the people or material required to accomplish work.

III. Work is the successful combination of resources, materials, and time.

IV. Policy is definite method of action, selected from alternatives, based on conditions and results. Policy controls the interactions of all facilities/equipment requiring work, corporate resources performing work, and the reporting measures required to monitor the results.

\* Note, MasterLink defines a "facility" as more than a physical entity built to serve a particular purpose. A facility is any infrastructure, physical or logical, that enables enterprise activity.

## ***Domain Specific Elements***

- ***Definitions***
  - ***Resources***
    - ***skills***
    - ***materials***
  - ***Targets***
    - ***classification***
    - ***work requirements***
- ***Objectives (work)***
- ***Rules (policy)***

As you can see, the only difference between the generic and specific is the definition of a particular domain. A domain is a sphere or field of action, interest, or knowledge.



## ***The Key to Defining a Domain: A Method of Classification***

- ***CSI MASTERFORMAT Provides the Foundation for MasterLink's Work Taxonomy System***
- ***MasterLink Extends CSI to Create A Generic Work Architecture***

### **I. What Is CSI MASTERFORMAT?**

CSI MASTERFORMAT is a system of numbers and titles for organizing construction information into a regular, standard order or sequence. By establishing a master list of titles and numbers, MASTERFORMAT promotes standardization and thereby facilitates the retrieval of information and improves construction communication.

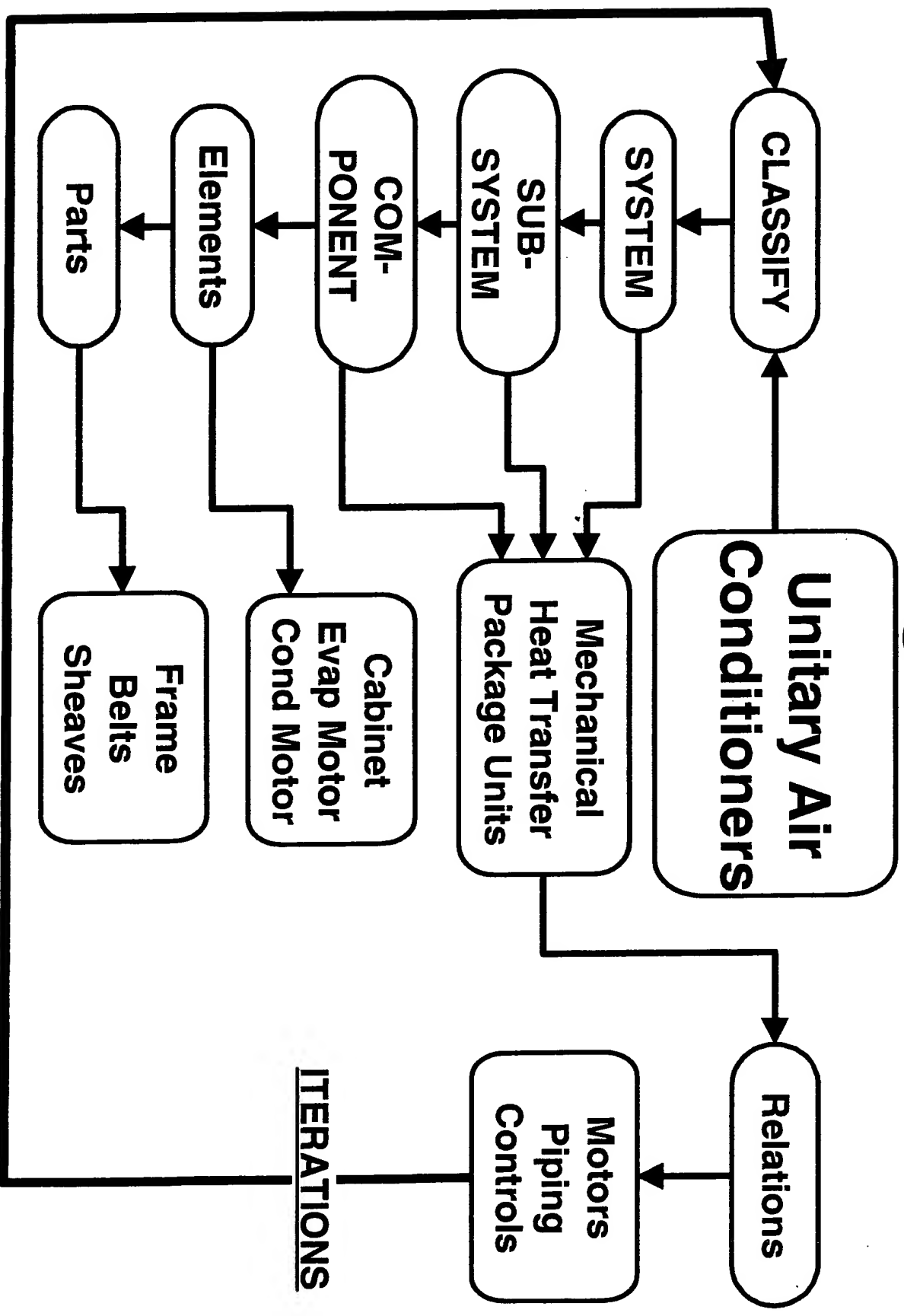
### **II. FAST Integrates MASTERFORMAT with MasterLink's Automated Work Taxonomy System, by:**

- Starting with CSI's System/Machine Classification Method
- Adding Work Objectives
- Adding Skill/Material Requirements
- Formulating Base Time Requirements
- Creating Rules Templates

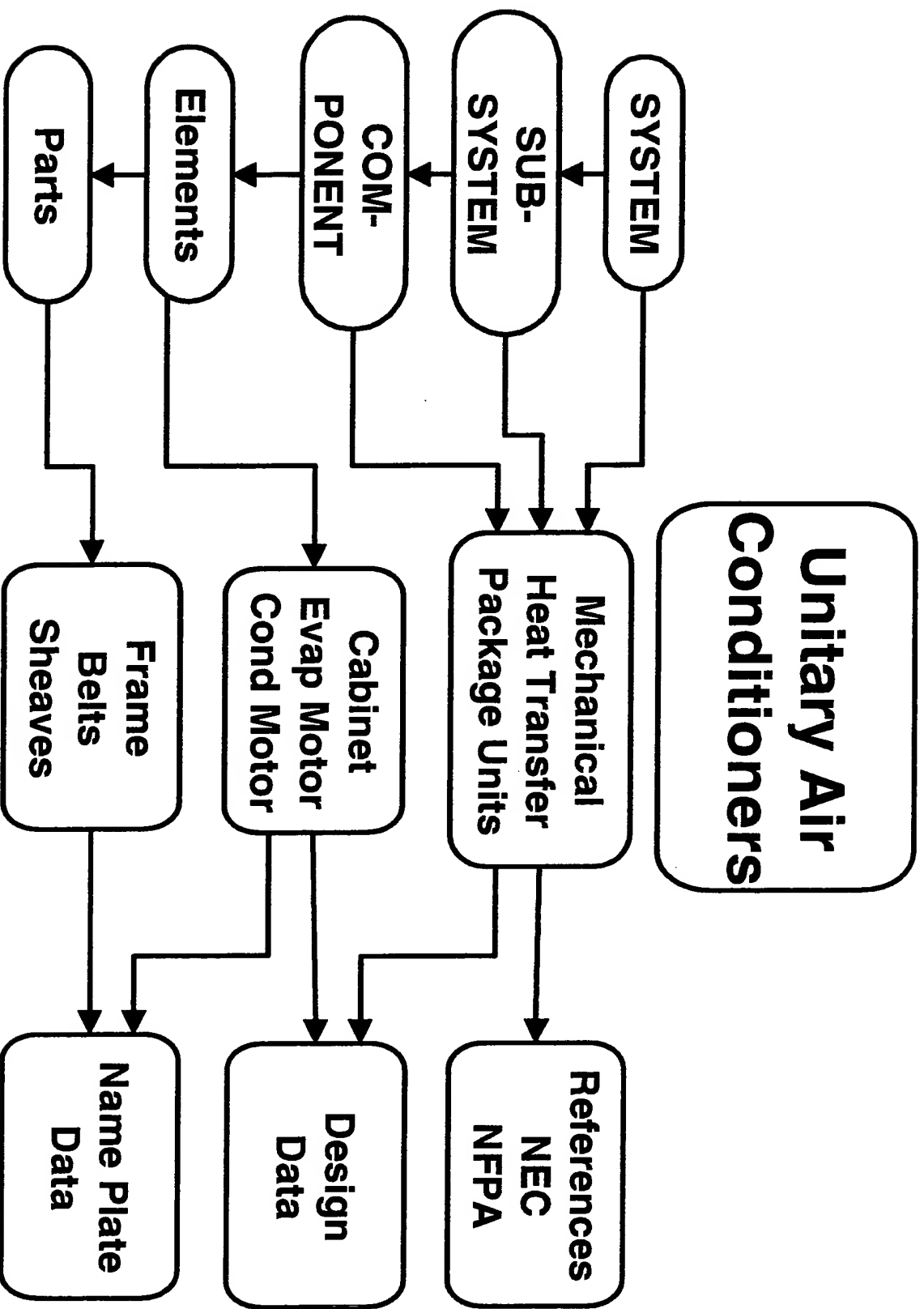
### **III. Show the Following Slides**

- Work Target Definition
- Target Design Data Definitions
- Target Task Definitions

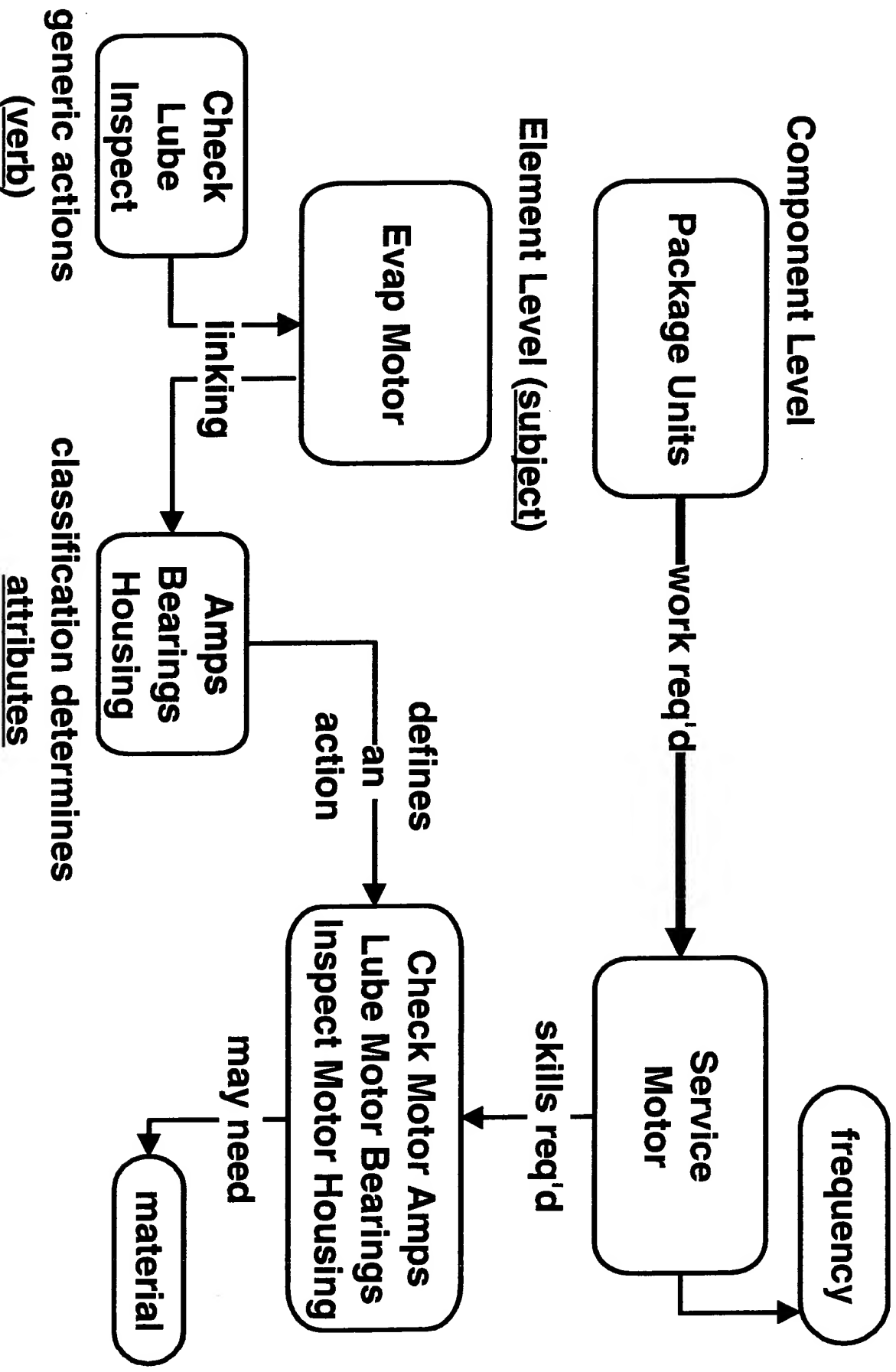
# Work Target Definition



# Target Design Data Definition



# Target Task Definitions



## ***AST Implements Standardized Data Structures***

- ***Reduce Implementation Costs***
- ***Encourages Benchmarking***
- ***Enables Customized Information Display***
- ***Deliverable with Current Technologies***
- ***Easily Extendible***

I. No More Proprietary Systems!

II. Allows for True "Apples to Apples" Comparisons

III. Displays Information Based On the Resource Receiving It

- an electrician sees electrical information
- a mechanic sees mechanical information
- a manager sees what he/she needs to make informed choices

IV. Because We Are Text-Based - We Can Do What We Say!

- we can work within existing rf bandwidth capabilities
- we can use off-the-shelf hand-held units to accomplish our goals

V. We Can Extend Our Core System Functionality Into Other Areas

- Energy Mgmt. - Security/Life Safety - Production
- Engineering - Purchasing - Accounting

## ***What Is Policy?***

- ***It Is a Collection of:***
  - ***Target Definitions***
  - ***Task Definitions***
  - ***Rules for Planning***
  - ***Rules for Scheduling/Dispatching***
- ***It Is For One or More Sites***
- ***Is Owned/Maintained by Manager***

Show the Following Slides

- Target Definition
- Task Definition
- Resource
- Job

## *Why Start With Facilities?*

- **Size and Scope**
  - **US. Commercial Market**
  - **Costs of Operations & Maintenance**
- **Relevance to MasterLink**
  - **Commonality Factor**
  - **Complex Domain**
- **Easy Extension Into the Enterprise**

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### **I. What Is the Facilities Domain and Why is it Important? SIZE!**

- Size 218,000 commercial buildings >50,000 s.f. = 40 billion s.f., not including military or manufacturing
- Owners/Operators spend at least \$325 Billion dollars/year in operating and maintenance costs

### **II. Why is it Relevant to MasterLink? Horizontal Market Access !**

- Facilities are common to all business
- Operation and management of physical facilities is complex
- Involves elements found in sophisticated manufacturing or service operations.
  - legacy systems
  - logistics
  - material management
  - labor management
  - customer service

## ***R&D and MasterLink: The Same Goals***

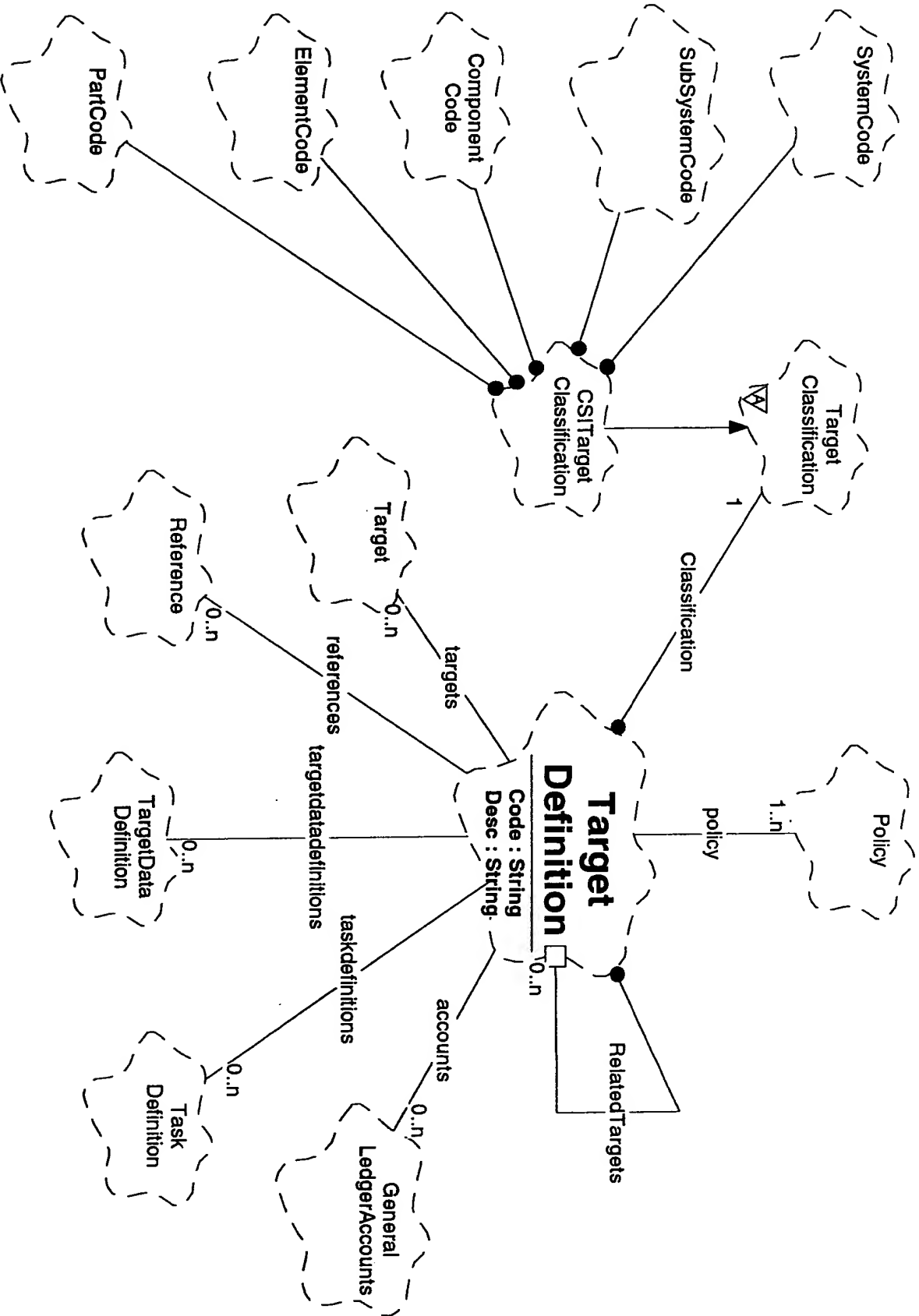
- ***Optimize Operation & Maintenance***
- ***Develop Adaptive Strategies***
- ***Focus on Mobile Workers***
- ***Improve Management Skills***
- ***Deliver Value-Adding Services***
- ***Improve Our Knowledge Base for  
Our Customers Benefit***

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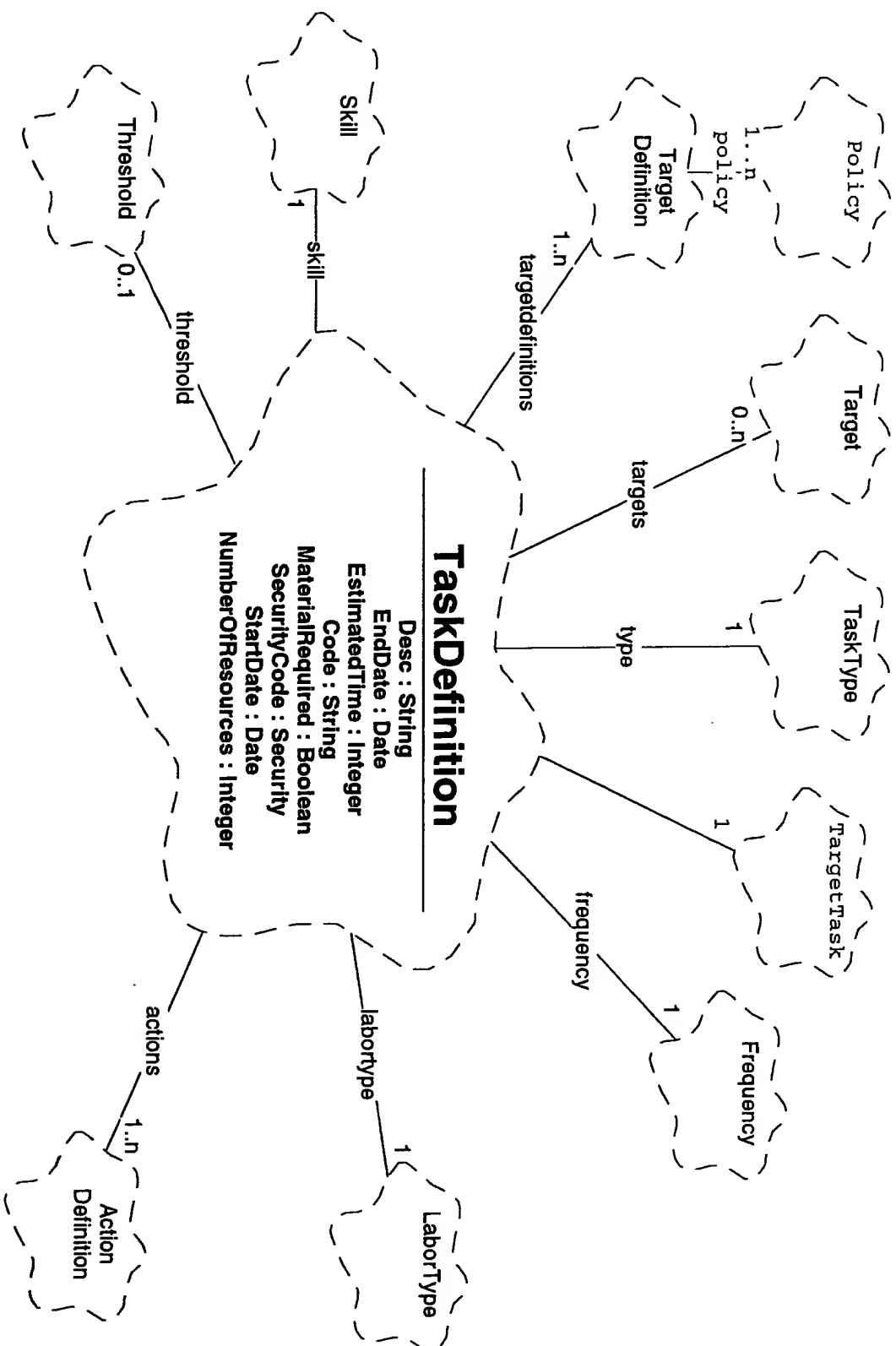
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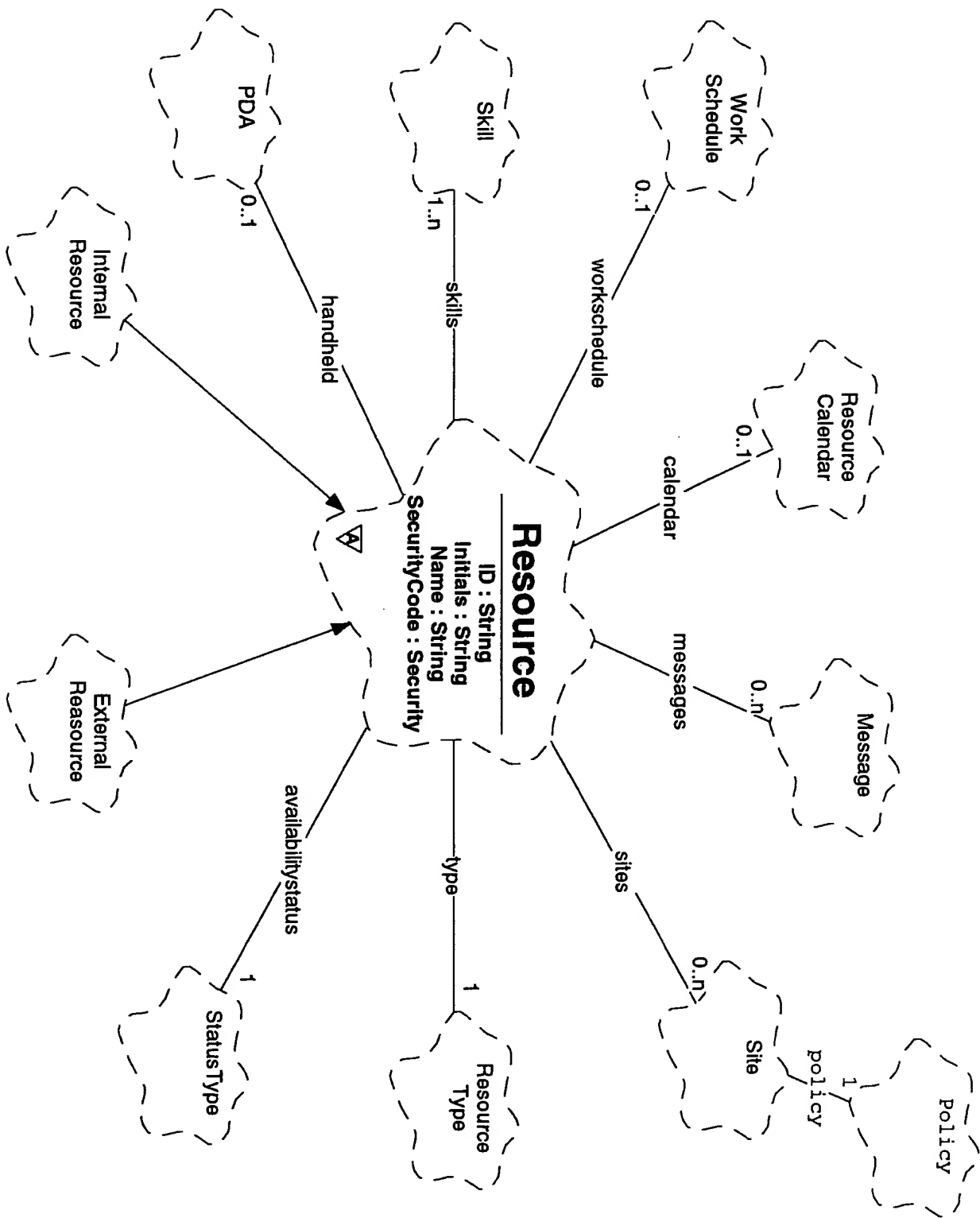
# TARGET DEFINITION CLASS



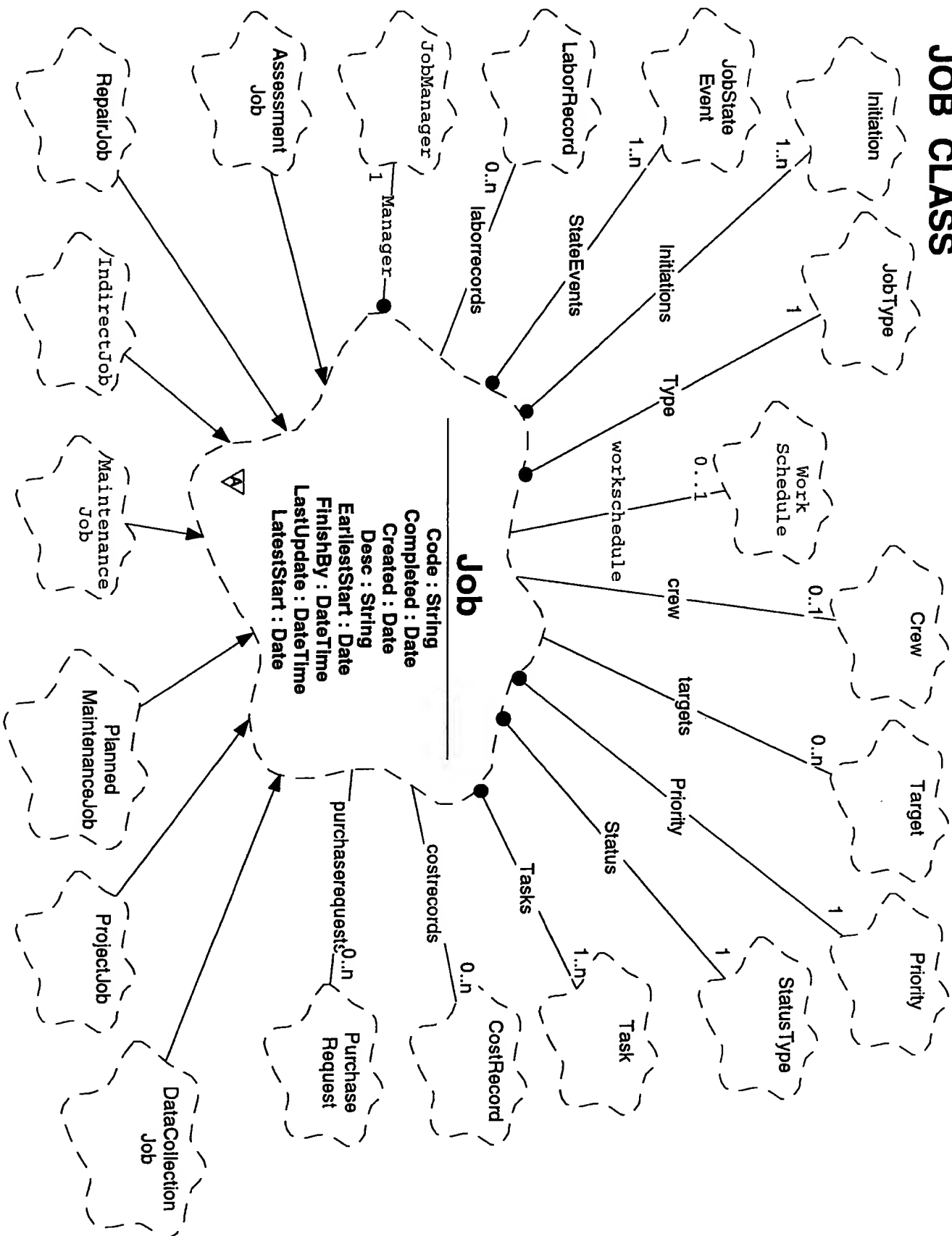
# TASKDEFINITION CLASS



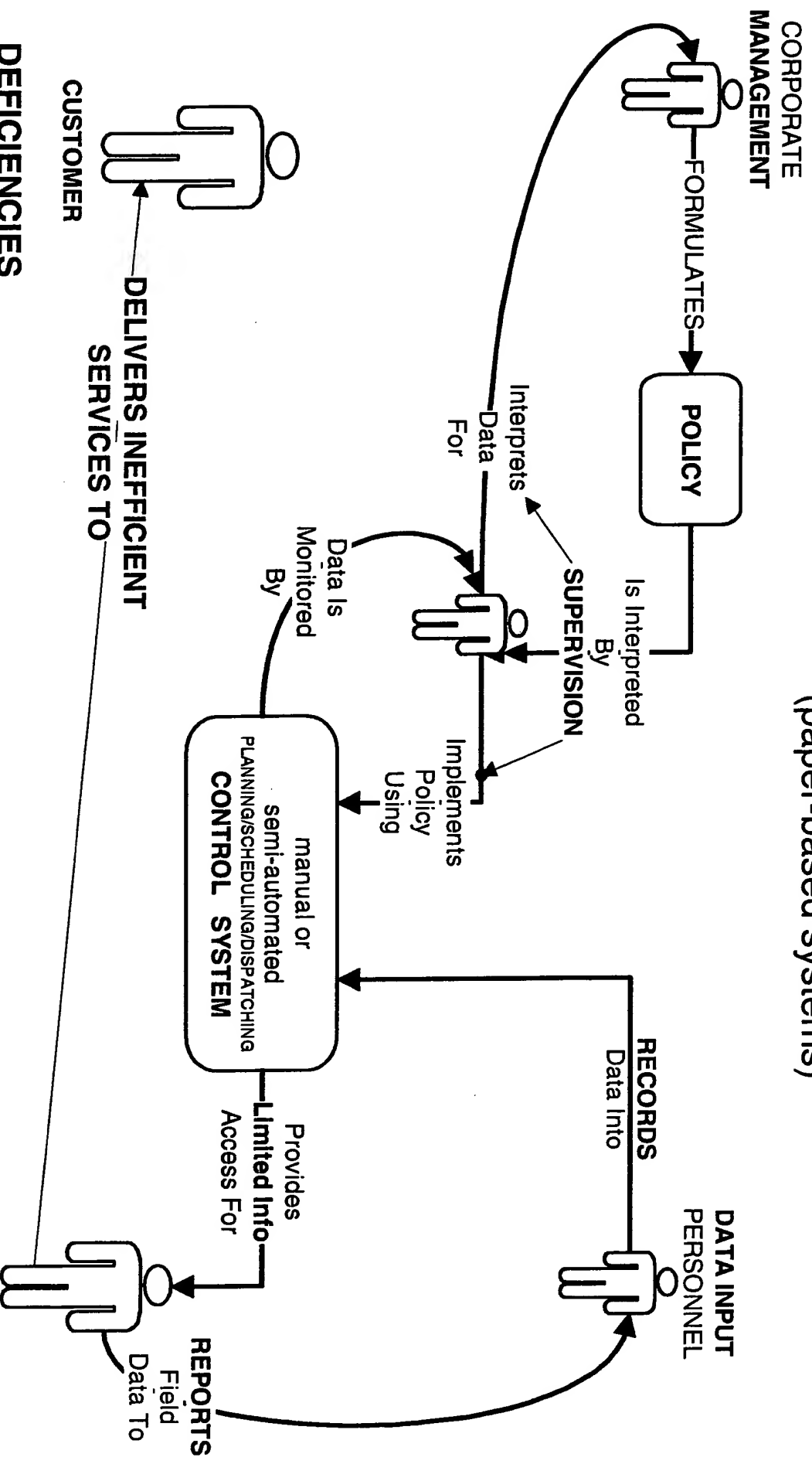
# RESOURCE CLASS



# JOB CLASS



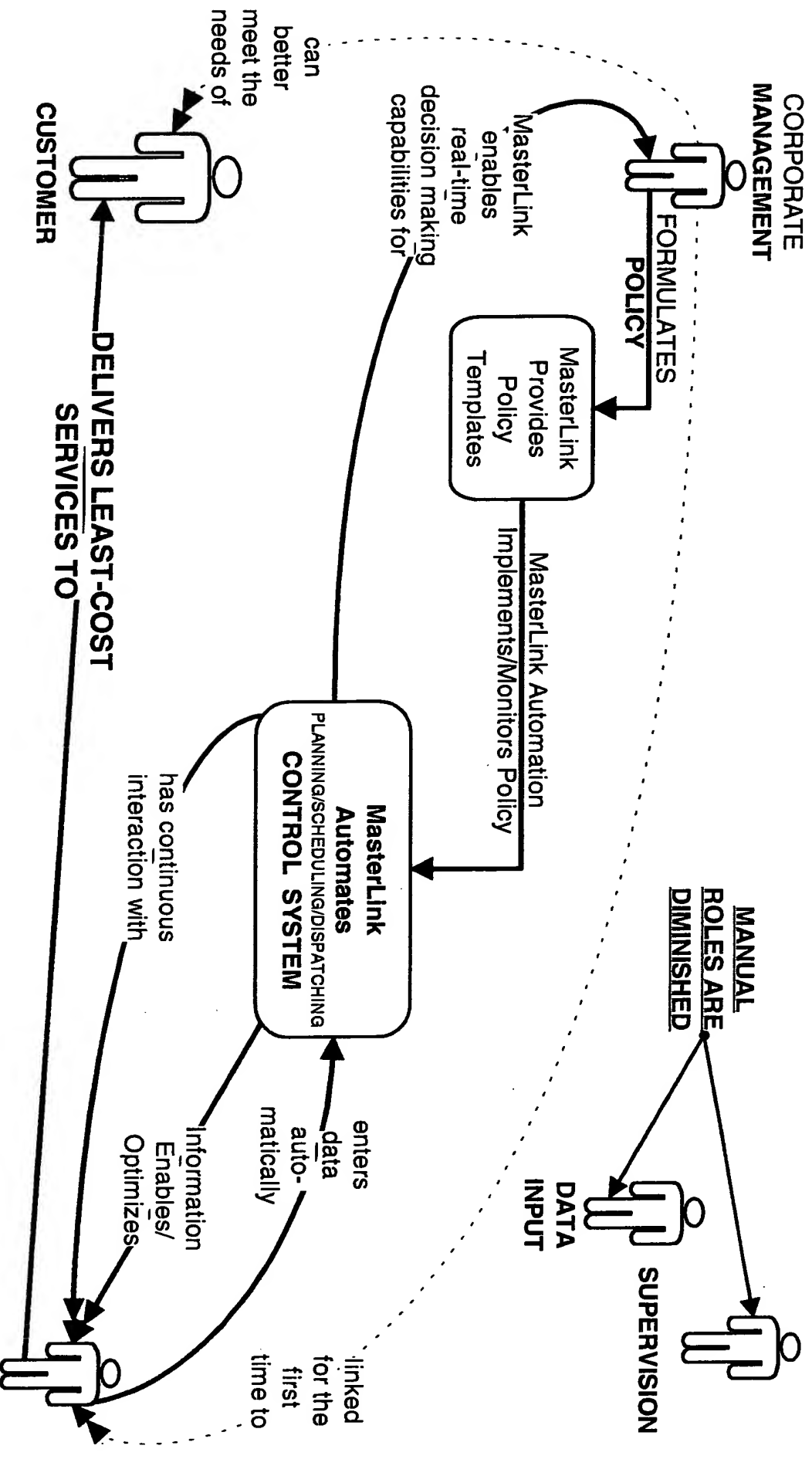
# THE PROBLEM: Mobile Workflow Process (paper-based systems)



## DEFICIENCIES

- Management:** Has Limited Access to Out-of-Date Information, Little Control of the Mobile Worker, and Little Control of Customer Services
- Supervision:** Adds Limited Value, Only Coordinates the Activities of Others
- Data Input :** Does Not Add Value, Only Records the Activities of Others
- Mobile Worker:** No Jobsite Access to Advice, History, or Other Assistance
- Customer:** Receives Poor Service Delivered With Inconsistent Quality

# THE SOLUTION: FAST-Enabled Facilities Process



## BENEFITS

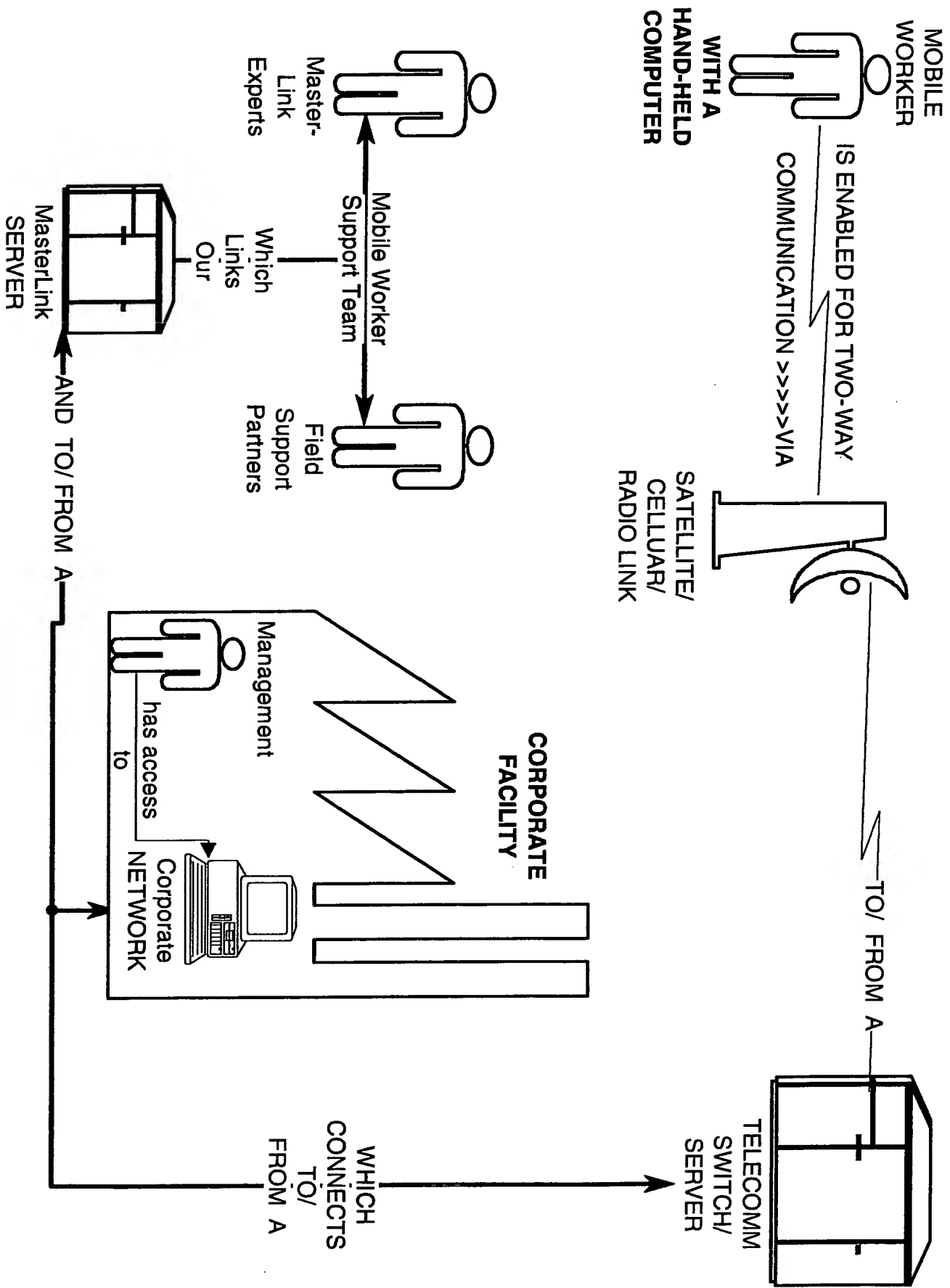
**Management:** Controls Policy Formulation and Implementation, is able to maximize the productivity of the Mobile Worker, and is able to insure Superior Customer Service at **Least Cost**

**Customer:** Receives Maximum use of Facilities and Equipment

**Mobile Worker:** Provided with All Relevant Information Required to Perform Work Assignments, at the Jobsite

**Data Input:** No longer needed.

# THE IMPLEMENTATION: MasterLink Value Delivery Chain



MasterLink has many of the same goals as Maintenance & Diagnostics, LLC. The purpose of this document is to show how the two companies may develop synergy by mutually supporting each others objectives.

**M&D Goal:**            **Establish and maintain strategic advantage for optimizing operation and maintenance practices through programmatic application of technologies.**

**MasterLink Contribution:**

Our long-term strategy for our **Facilities Automation Simplification Technology (FAST)** architecture is to enable the integration and coordination of all corporate information resources to improve productivity and profitability. **FAST** can be the **Master-Link** used to join various specialized chains of automation common to all businesses, such as the following:

* maintenance	* security	* life/safety
* environmental	* production	* administration
* engineering	* accounting	* purchasing
* sales	* customer service	* information systems

We believe that our ultimate success will be driven by our ability to become an indispensable source of work process management, and mobile workforce innovation for our customers.

**M&D Goal:**            **Develop, optimize, and implement adaptive maintenance strategies, products, and services.**

**MasterLink Contribution:**

**FAST** creates a sustained linkage between strategy and the way work is done through the use of policy templates. These templates are the “rules book” that controls the interactions of all facilities/equipment requiring work, corporate resources performing work (internal & external), and the reporting measures required to monitor the results. This gives corporate management the ability to adjust their tactical operations on an as-needed basis. The result is continuous process improvement with the accompanying economic benefit of least-cost services delivery for our customers and partners.



**M&D Goal:**        **Focus on improving skills and decision making of client front-line, hands-on workers.**

**MasterLink Contribution:**

**FAST** manages all activities at the task level by providing step-by-step instructions, situation assessment or diagnostic advice, historical data, even training information to the jobsite via a hand-held computer. The availability of these aides, with **FAST** governing the entire work order process, eliminates time-wasting activities and gives management unparalleled control of the work force. The result is a 30%, or more, increase in crew productivity.

**M&D Goal:**        **Improve skills of managing change for managers and supervisors in applying new processes of technologies and applications.**

**MasterLink Contribution:**

Policy level, or operational level managers can easily use **FAST** to extract complex information that is presented in easy-to-understand format. **FAST** gives management the freedom to change operating policy as often as needed to adapt to changing conditions. Additionally, **FAST** will actually track the effectiveness of policy decisions made, manager-by-manager, to improve accountability.

**Additional MasterLink Contributions:**

- \*        M&D can use **FAST** to become a more efficient service provider, enabling it to outsource more work for its customers.
- \*        M&D can use **FAST** to express its corporate knowledge in a state-of-the-art information delivery system to help its customers remain competitive.
- \*        M&D can participate, with equity, in MasterLink to develop and deploy a unique value-adding product with extraordinary market potential.